

Reagan Defense Forum: The Third Offset Strategy

As Delivered by Deputy Secretary of Defense Bob Work, Reagan Presidential Library, Simi Valley, CA, Nov. 07, 2015

THOM SHANKER: Thank you very much. And welcome.

Apropos of this being the valedictory formal conversation of this great forum, I've been a lifelong history of military strategy. And I've learned one of the most dangerous places a reporter can stand in the conflict zone is between a conference audience and cocktails. (Laughter.)

So this is going to be a breezy half-hour conversation, and then we move on to the lighter part of our evening.

It was one year ago at this exact conference that the former defense secretary, Chuck Hagel, unveiled what the Pentagon called the "Third Offset Strategy," which is not a way to win a football game without deflating the game ball, but actually has become one of the major Pentagon initiatives in the intervening 12 months, even though it has been -- now that I'm an editor not a reporter, I can say it has been woefully under-reported by the mainstream media.

So I thought we would start first by those who weren't here last year, or haven't been following it, Mr. Secretary, give us a quick definition of the Third Offset Strategy, and why it's such an important line of operation for the Defense Department today.

DEPUTY SECRETARY OF DEFENSE BOB WORK: Well, as Secretary Carter likes to say, when he was a deputy secretary just two short years ago, in 2013, he had to worry about three contingencies. He had to worry about a North Korean invasion of South Korea, or an attack.

He had to worry potentially an attack with Iran, because of our desire to keep them from having a nuclear weapon. And then also a Chinese invasion of Taiwan.

Now, just two years later, he talks in terms of four contingencies, and one condition. Adding Russia, as he talked to you about today. And the condition being a long-term

global counterterrorism fight increasingly designed, I mean, against ISIL.

Now the reason he talked to you so much about Russia and China today is because they are great powers, this is totally different. Just 15 years ago we did not have any great powers to worry about.

Great power, in the definition that John Mearsheimer says, and as the COO of the department, I subscribe to this definition completely, because I focus capabilities, not intentions.

A great power is a state that can take on the dominant power, the United States, conventionally, has a nuclear deterrent force that can survive a first strike. Using that definition, we have two great powers.

This is something totally different that we haven't had to deal with for the last 25 years. Whenever you are dealing with great powers, the first and most important thing is to keep us from having a war with them.

It's all deterrence. So what we do, offset strategies are focused on great powers, and are focused on one thing and one thing alone, that is making sure that our conventional deterrent is as absolutely strong as possible, to make sure the chance that we would go to war would be very, very low.

And what the offset strategy does is the United States has never tried to match a great power tank for tank, ship for ship, airplane for airplane, or person for person.

Generally what we try to do is offset. And we've had two offsets before, one in the 1950s, where we would use tactical nuclear weapons to deter a conventional attack on Western Europe.

And then in 1975, when the Soviet Union gained strategic nuclear parity, we went after conventional weapons with near-zero miss, precision-guided weapons.

The third offset, what we have been talking about, is it time to have a third offset? So here's what I want to leave with you. One, they're focused on conventional deterrence against great powers.

Two, they're not just about technology. This is not about a revolution in military affairs.

There's always a strong technological component, but it is strategy-based, technologically oriented, and you want operational and organizational constructs that give you an advantage and an offset against your adversaries who might outnumber you.

It is focused on the operational level of war, or the campaign. That's what an offset strategy is. And the reason why we refer to this as the potential third offset is because we've had two before this.

MR. SHANKER: So it has been 12 months since Mr. Hagel unveiled this important initiative. He has passed the torch to you and Secretary Carter. So I'll ask you to grade your own homework. What have you done in the past 12 months? What do you have to show the American public in the Third Offset Strategy?

SEC. WORK: Well, the primary thing we've done the last 12 months, Thom, is organize ourselves for combat, if you were, and to actually think about this problem. The last time we did this was in 1973 when we started what was called the Long Range Research and Development Planning Program (LRRDPP).

Took 18 months to complete. I would actually mark the beginning of the third offset thinking with Secretary Carter's establishment of the Strategic Capabilities Office (SCO) when he was an AT&L and later as the deputy, which was focused on the advanced capabilities that we were seeing in the Western Pacific.

Over this last time, the SCO, the Strategic Capabilities Office, it looks at what we call the first FYDP. What can we do with the things that we have in the force now, use them differently in a more innovative fashion to gain an advantage?

The second FYDP is the next 10 years, are really focused by what we call strategic portfolio reviews. And we look at things that we could be investing in right now that we would be able to bring capabilities in right away.

And then the Long Range Research and Development Planning Program, which was led by Steve Welby, who was our assistant secretary of defense, acting, for research and engineering, was looking at 20, 30 and beyond.

And what gives us a lot of confidence that we have a kind of understanding of where we want to go, is that if you overlay the three efforts that were happening, about 70 to 75

percent of the time they're saying exactly the same thing, which gives us a lot of confidence after almost two years of thinking about this. And we kind of have the right way to go.

What Secretary Carter brought to this was he said, look, you heard this morning in the innovation about how fast the cycle time was. So we've got to plug more into the vibrant innovation inside the United States.

So the Defense Information Unit-Experimental (DIUx) was set up so that companies in the Valley, innovation engines, can come to that point and say, we have an idea we think that can help you solve these problems.

And then Department of Defense organizations can go to that point of presence and say, we have problem, we're wondering if there's anything out here who can help us.

At the same time, we have started an operation with In-Q-Tel, venture capitalists. And we do that -- there are only three people who can say what we invest our money on: myself, Stephanie O'Sullivan, who is the principal deputy of the national intelligence community, and the vice chairman of the joint chiefs of staff.

And so all of these things were designed for us to try to figure this out. And we think -- you know, this morning, Frank Kendall called us "Bob Work's Third Offset Strategy," if that's the way it's going to be remembered, it will be a failure. (Laughter.)

You know, what this is, is I'm an advocate for the Third Offset Strategy. And we've had two secretaries of defense who have said this is something we need to do. And Secretary Carter is the one who is really breathing life into what this really will be.

And so we're hopeful that we'll be able to really pursue this over the next couple -- well, over the next 10 or 15 years.

MR. SHANKER: But it has been 12 months, lots of candle power, intellectual power has gone into it. Secretary Carter, it was very interesting, a lunch speech, sort of hinted that you're already seeing some technological innovations if not breakthroughs.

I wouldn't be a very good news man if I didn't say, what was he talking about? Tell us something that you've actually accomplished?

SEC. WORK: Well, we've already started to make investments. And I'll be able to talk more about that once we finish with our 2017 budget bill, Thom. We did a lot of investments in '16, which was guided by this thinking, and a lot more in '17.

So I'm not going to give you specific examples of investments. But let me tell you what the big idea really is about.

It's about human-machine collaboration and combat teaming. Now let me explain to you what this is. Human-machine collaboration combat teaming has five basic building blocks.

It was illuminated to us by two major efforts. One was the LRRDPP, which really focused on how do you go up against great powers in a conventional sense when they have as many guided weapons as you do, and have a homefield advantage.

How would you do that? And the LRRDPP really, really did a great job in looking at that.

The second thing was the Defense Science Board summer study on autonomy. To a person, every single person on the summer study said, we can't prove it, but we believe we are at an inflection point at an artificial intelligence and autonomy.

How might we use that as an advantage in an offset? So the first thing was go after learning machines. And learning machines are machines that literally will operate at the speed of light.

So when you are operating against a cyber attack or an electronic warfare attack, or attacks against your space architecture, or missiles that are coming screaming in at you at Mach 6, you're going to have to have a learning machine that helps you solve that problem right away.

Now human-machine collaboration, in 1997 Garry Kasparov was beaten by a computer, Deep Blue. Everybody thought that was a big deal. Well, what was a bigger deal was in 2005. Two amateur chess players using three PCs, personal computers, won a chess tournament, \$20,000, against a field of supercomputers and grandmasters.

The way will go after human-machine collaboration is allowing a machine to help humans make better decisions faster.

That is a big, big difference. There is an artificial intelligence (AI) bias right now generally in the community. But we think about adversaries, automated systems use algorithms based on old data.

This assumes we're up against a thinking adversary that is changing strategies all the time. And we will use machines to help our decision-makers make better decisions.

The best example I have for you right now is the F-35. The F-35 is not a fighter plane. It is a flying sensor computer that sucks in an enormous amount of data, correlates it, analyzes it, and displays to the pilot on his helmet.

And we believe, and we say it over and over, that this fifth gen fighter, just because it can't out-turn an F-16, or just because it can't go as fast, we are absolutely confident that F-35 will be a war-winner. That is because it is using the machine to make the human make better decisions.

Then there is assisted human operations. I'm telling you right now, 10 years from now if the first person through a breach isn't a fricking robot, shame on us. Assisted human operations, wearable electronics, making sure that our war-fighters have combat apps that help them in every single possible contingency. We can do this.

Human-machine combat teaming, I don't think I have to explain that. That's using unmanned systems and manned systems. And I can give you many, many, many examples of what's happening.

And the last ones are autonomous weapons. You take those five building blocks, you put them on a single network where everything is learning at the speed of learning, that is the reconnaissance strike complex of the 21st Century.

Do I think we will have an enduring 40-year advantage in that? No. As you heard this morning, this is all about temporal, it's a temporal advantage. But we believe that our greatest advantages are people.

And our greatest advantage is the vibrant technological community in the United States, and the vibrant technological communities in our defense industrial base. We will ride that advantage.

Secretary Carter is absolutely certain, based on his year in the [Silicone] Valley, that we

can do this.

So I will have more to say about this after we talk with our senior military leaders. And obviously Secretary Carter has to decide exactly how he wants to do this. But human-machine collaboration and combat teaming is the big idea.

And we believe it will provide us with an extremely important advantage as we go on.

MR. SHANKER: Well, there's the headline from the conversation, of course. You mentioned the F-35, in development now.

But even if you can't predict specifically, how many years you think it will be before this new concept is actually in the field from the individual soldier all the way up through the decision-making add-ons in headquarters?

SEC. WORK: It's going to take some time. Thom, essentially we said, here's our Second Offset Strategy in 1975. Fifteen years later, in the Gulf War, there were more bass fishermen in the United States who had GPS receivers than people in the United States military.

We only had a small portion of our force that was really configured to fire guided munitions. What this is, is a period of experimentation. What triggers a third offset is when the Army starts thinking, what is air-land battle to look like?

When combined arms warfare in the 21st Century is the trinity between kinetic, EW, electronic warfare, and cyber operations on the battlefield, what does that look like?

Our advantage is, and this is an enduring advantage, the thing that I know is that if we force, for example, an adversary who is an authoritarian power to adopt the organizational and operational concepts that this will cause, it will cause changes in their military and ultimately in their society that will make it less likely that we will fight against each other.

That's the value proposition of this. We know we have an advantage in people and innovation. And, sure, there are going to be fast followers. But everybody thinks about fast, I think about followers.

As long as we have fast followers trying to chase us, I think we're in pretty good shape.

MR. SHANKER: I heard you speak in January at a similar conference hosted by Michele Flournoy, who is here in the audience. And one of the things you said, Mr. Secretary, beyond policy and operational things, you said, and I quote you.

"We have to embrace, not shy away from criticism." That's a very brave thing for a senior leader to say in public. But I do have a couple of those criticisms of the offset strategy by people who are very knowledgeable.

I wanted to give you a chance to deal with them, rebut them, or...

SEC. WORK: Absolutely.

MR. SHANKER: ... embrace them, as the case may be.

You know, when Secretary Rumsfeld was in before 9/11, he used similar language about not wanting to build the military against specific threats, as in, actors. It was all about capabilities.

Well, 9/11 came along and suddenly we had, you know, as many threat actors as we could. One of the criticisms of the third offset is that likewise it's ideas and concepts but not tied to real world threats.

So tell us how the third offset works against near peer, China/Russia, against the Iranians and North Koreans, and against the ISIS and al Qaeda, because I think that's what the average person wants to hear, how will this specifically keep us safer against these threats.

SEC. WORK: Well, this is going to be a big, big difference. It's a great question, Thom, because this is going to be a big difference than the Second Offset Strategy.

The Second Offset Strategy had one opponent, the Soviet Union. It was focused on high-end conventional warfare. And it assumed everything else was a lesser included case.

This third offset really, although it is focused on great power, trying to deter great power wars, by -- it's really focused on the advanced capabilities that Russia and China can bring to bear.

The whole purpose is to convince them never to try to cross swords with us conventionally.

But I can go through right now, one of the best examples of human-machine collaboration combat teaming is the global counter-terrorism network that we have set up using unmanned systems, computers, soft operators who really know their business, exploiting stuff from SSE.

Big data analytics, that's what Palantir is doing right now. Palantir is saying, hey, don't go after automated solutions, go after big data analytics, crunch the data and show it in a visual way to a decision-maker, and the way that decision-maker can think, in other words, you can actually change the visualization based on the human decision-maker.

And I'm telling you right now that if we were able to do this, we would be able to take, for example, the 90,000 Instagram posts or post that ISIL each day, and crunch that data and say, OK, this is how we might be able to go after this narrative. And this is how we would do it.

So in this case, although it is designed to give us an edge in high-end conventional warfare against near peers, it is totally applicable, I would argue, across the full range of military operations. And that's what's going to make this one very different.

MR. SHANKER: Right. Another criticism, or at least a challenge for you is that for decades the Defense Department and American industry were marching forward arm-in-arm. It was a marriage of mutual convenience.

It's not a secret to say that in recent years, especially with Silicon Valley, in the post-Snowden era, there are great concerns about privacy that much of the important technology that you might need in the incubator environment where all the best work is being done, I'm not going to say that you're divorced from them, but it's a dysfunctional marriage at best.

So what is your prescription for marriage counseling with this important part of the industry that is absolutely essential to the third offset success, but right now that part of industry is really not in love with you?

Nothing personal. (Laughter.)

SEC. WORK: It's something that Secretary Carter thinks about all the time. He talks about the Department of Defense having kind of built these impenetrable barriers over our whole operation over the last course of the year.

He constantly talks about tunneling through those so that a free flow of ideas coming in and out are possible. He realizes that the vibrancy in the Valley is a national asset that if we don't tap into, we're going to fail.

We will fail in this endeavor, which is why he has set up the Defense Innovation Unit Experimental. Why he approved a pilot with In-Q-Tel. Why Steve Welby is working with 75 laboratories, 10 FFRDCs, 13 university-affiliated research centers right now, 319 multi-university research centers.

We have to grab that and we have to do better. And let me say something here because there are some members of Congress here. In 1973, the way we did this is we took the smartest from industry, and they came in and ran the boards for the LRRDPP, the Long Range Research and Development Planning Program.

I couldn't do that today because of FACA rules. First it would take 19 months to get the person approved. And then I would have to have an open meeting. Well, we don't have this meeting open. We don't want our adversaries knowing the way we're thinking.

And so what I would say is we can do this together. We've got to work with Congress. And I'm telling you that the secretary has a lot of ideas on this. You know, and him being out in the Valley for that year really kind of crystallizes ideas and are helping us try to figure this out.

I had a breakfast meeting this morning with Congressman Forbes. I've spoken to Chairman Thornberry. You know, we can do this together. This is a way in which we can really make this happen.

MR. SHANKER: But I have to ask, I mean, that all makes sense. But you really think that these cutting edge IT software companies who are in a battle with the U.S. government over privacy and encryption, you can come to accommodation with them to get also their cutting edge technology that's essential to the offset?

SEC. WORK: Secretary Carter says -- and I think he said it today at lunch, well, I've

heard him say it so many times I can't remember if he said it today or another time.

You know, when it comes to the national security of the United States, failure is not an option. And as everyone told you this morning, we are worried that our technological advantage is being eroded, and it's being eroded at a relatively fast pace.

So if we can't do this, we're going to fail. So these first attempts, the DIUx and the In-Q-Tel, we need to figure out -- we just need to keep doing these, what the secretary calls pilots. You know, drilling holes in this impermeable barrier.

I am confident we can do it, Thom. But we're going to need the help of Congress, just like we did in 1975, when Congress and the Pentagon really said, this is the way we need to go.

And so I'm confident we can do it. And we just have to get after it.

MR. SHANKER: You know, if your administration was a movie, we would be deep in act three, racing to curtain, because you have just about a year left. How do you prioritize whether it's procurement or investment in the few remaining months you have left?

And also make it stick, regardless of who is the next occupant of the outer ring of the third deck at the Pentagon?

SEC. WORK: Well, we won't be able to go as fast as I would've liked. We'll have about \$14 billion less in FY17. I, like the secretary, am just so thankful to Congress for giving us stability for the next two years.

We could have gone faster in FY17, quite frankly, if we had had more money, because the last thing we want to do is to cut force structure at this point, or, you know we want to do a very limited amount of force structure cuts, only to -- if absolutely necessary. And so it's where you can make these investments.

What I am going to be focused on for the next years is I'm going to do everything I can, whoever comes in to the next administration, that we will have an intellectual underpinning, and a wide variety of choices that we believe would really set us on this pathway.

You'll see more demonstrations. You'll see experiments. We are seeding them now.

Steve Welby is already making changes to the way he adopts -- I mean, allocates money.

So the only thing I can promise this audience is in the next 18 months, we're going to do a lot of thinking about this. We want to get now really go to Congress and say, this is important.

And that is the way that offset works. It transitions from administration to administration over a long period of time, based on a commitment that this really will provide us with an advantage.

So that's going to be kind of my focus. I'm very -- you know, as the secretary said, we would always ask for more money. But, wow, we can make some very serious moves.

The other thing I want to say, you know, the last thing I want you to go away from this is thinking this is all about technology.

The number one advantage we have is the people in uniform, in our civilian work force, in our defense industrial base, and the contractors who support us. That is what we consider to be our key competitive advantage, which is why one of the four things that Secretary Carter talks about in his Force of Future is maintaining that edge in competitiveness in human talent.

Let me just say one thing. I know you want me to stop. But in this case, in this offset, the young officers who have grown up in this "iCombat" world, they're going to have ideas that our senior officers simply will not be able to make, to connect.

And that is not an indictment. I took -- I found a great quote from Yan LeCun, I probably screwed up his name. But he is the Facebook artificial intelligence director -- artificial intelligence director at Facebook.

And he says: "The creativity of old people is based on the stuff they know, whereas the creativity of young people is based on the stuff they don't know, which allows for a little wider exploration."

So what will happen is our senior military officers who know combat at the campaign level, something our junior officers don't know, they will be able to make the leap in the operational concepts and organizational constructs.

But if we can tap in to the captains and the majors and the lieutenants who have grown up in this world, and we can manage that creativity together, we will kick ass. Oh God, I mean, it just makes me... (Laughter.)

MR. SHANKER: That's a military term of art. "Bob Work's Third Offset Strategy," on the back it says "Kick Ass." (Applause.)

SEC. WORK: So that's why I missed the one this morning where General Milley adopted the young lieutenant. But, by God, that's what Secretary Carter is trying to get us to do.

We're trying to do this whole thing together and tap into that incredible ideas at that level who can help us make human-machine collaboration and combat teaming something really hot.

And, again, it's an advantage that we ought to ride.

MR. SHANKER: Great. I have a big question and then a small question to wrap up. And so we'll have time for a couple of from the audience. So if you want to start lining up.

The big question is, you have mentioned investment. That's yin. Unfortunately there's the yang where you won't be able to invest. What risks are you willing to accept as you move ahead with the Third Offset Strategy?

SEC. WORK: Well, the risks that we have to accept is we'll have to do probably a little bit more demonstrations and experimentations than actual procurement. But I think that's all to the good.

Remember, there was a big ACTD, Advanced Concepts and Technology Demonstration called "Assault Breaker" that actually kind of shook everybody up and said, whoa, I understand what this conventional guided munitions offset is all about.

So what you'll see is we'll do a lot of demonstrations, but we won't -- the risk that we'll be taking is we probably won't be able to buy the capabilities as fast as we would want.

The next thing is, is we've got to make sure we don't overload one way or the other. We can't be convinced that we know the answer. This is all about a voyage of discovery

where people are saying, no, you've got this wrong, this was a faulty assumption.

And so what I would think is the risk is over the next 10 years as we're trying to really put this together, is we have to really make sure that we're keeping pace with our primary potential competitors' capabilities. And as you heard Frank say this morning, he's really worried about that.

And then there are other risks that, you know, do you give up a little force structure to get a little bit more capability? Man, in this environment, the chiefs would probably say, look, you're asking me to do an awful lot, it would be really hard to do that.

So it's going to be a constant balance. And that's what Secretary Carter will try to come to grips with in the PB17, President's Budget '17 submission.

MR. SHANKER: Right. My final small question. You've seen Defense Department culture from in uniform, in the services, from you current position, and the think-tank world.

DARPA, which can invent anything, if you were to give them the order to invent you a magic wand that could change one thing about how the Pentagon operates, what would that be? (Laughter.)

SEC. WORK: Wow. Make my commute shorter. (Laughter.)

Look, the one magic wand I would do is we have to commit as an organization to this broad-based way that we think about this. We have to commit as an institution. It has to happen at the top with the civilians. It has to happen at the top with the military, the chiefs.

It has got to happen with all of the commanders and the young officers and enlisted that are coming in. We have to say, this is a future that is really going to help you survive in the future and make sure that we can do our job.

So if I could wave a magic wand, I would like to wave magic wand and have everyone just buy into this right away and say, look, we may make mistakes, but let's go.

So I know of no magic wand, but if you have one, Thom, I'll take it.

MR. SHANKER: All right. All I have is my pen. Cocktails and the beautiful California sunset waits, but I do want to take one question from each microphone.

Yes, please.

QUESTION: Hi, my name is...

SEC. WORK: Hello.

(CROSSTALK)

QUESTION: ... ABC News. And thank you for coming. This is a huge honor.

But I just want to ask, I'm wondering if you could comment briefly on the Metrojet crash since we've heard about it at several of the different forums today. So I'm wondering if you just have any comment on -- you know, aren't all signs at this point pointing to a bomb being on-board?

SEC. WORK: I would say that everything that I have seen would lead me to believe that a bomb did bring that plane down. But we have no corroboration of that. So that is why everyone is being so careful.

The one thing we do not want to do is hurt the families on that airplane. But there is a lot of smoke. There is a lot of smoke. So the stuff that I would see, I would say, wow, this looks very, very suspicious. But we haven't made a final determination.

MR. SHANKER: And you, sir, have the honor of asking the final question of the official part of this year's Reagan National Defense Forum.

And before you ask, I just want to add my thanks on behalf of all of us who have been honored by being moderators to the Reagan Library and all of the sponsors and planners.

Make it a doozy.

QUESTION: I will keep it short, for sure.

Mr. Secretary, this has been a very illuminating talk, thank you. I really appreciated the

focus on experimentation that you started and also sort of ended with. But there was just recently an article written about some of the challenges that the department in doing these.

And one of the challenges is a lot of times with these experiments and exercises, a big point of it is to exercise some element of the force. And it constrains the way that it's constructed. And in some cases it means if the fleet gets sunk, you have to re-float the fleet so that the part of the game that was meant to exercise the forces on the fleet get to do what they were meant to do in the game.

So how do you deal with that? How do you make these experiments something that is truly open enough to all of the possibilities where the OPFOR really gets to do what it thinks a real enemy would do?

SEC. WORK: Well, one of the things, I believe this competitive environment is totally unlike that of the Cold War. It's more like the Interwar Period. Everybody knew that there was mechanization going on. Everybody knew that there were radios. Everybody knew that there were airplanes.

The technological advances were going extremely quickly. And it were the people that were able to take those advances and put them together that would give them operational advantage when the war finally came.

And it was a lot of experimentation. At that point we weren't really a global power. The Navy wasn't trying to make sure that the global system -- we were a global power, but our Navy wasn't deployed around the world.

They were in fleet concentrations. And really every year they had a lot of slack to do these experimentations.

I'll tell you right now, we're a high RPM force. Every single one of the chiefs will tell you, we are going as fast as the market will bear.

So we're trying to free up more slack for these experiments. And I will tell you that the Army is doing big experiments right now. The Navy does lots of little experiments. The Marine Corps do all sorts of little micro experiments. And the Air Force is doing stuff all the time.

So we just have to free up more. But here's how I'd like to end this, because the Interwar Period, I think about this all the time, the United States Navy, when they went into war in 1941, they hadn't fought a fleet action in 44 years. It wasn't really a true fleet action, but it was Manila Bay.

There were three communities inside the Navy. The first one was the carrier community. Those guys did nothing but experiments the entire time. They were constantly experimenting.

And six months after the war started, they won the war, really, in the Pacific at Midway. And you ask yourself, how in the hell did that happen? These guys hadn't had a fleet engagement in 44 years. But they were ready. And it was because of these experiments and exercises.

The submarine force, they opted out. Everybody said we will never do unrestricted submarine warfare. And the submarine force never asked the question, well, what happens if that changes?

So on the day after Pearl Harbor, when we went into unrestricted submarine warfare, we had a fleet boat that was good, a crappy torpedo, and really crappy commanders.

Not crappy because they were bad leaders, they had been trained as scouts and not as an aggressive arm of the fleet. And it took us two years to get that fixed.

And then you look at the surface warfare community, and it was a failure of imagination. The Japanese had a longer range torpedo, and they liked to fight at night. And weren't as good as them.

In this environment we have to be experimenting across the board, because everyone, all of our adversaries, are going to be picking all of these different things, and they're going to be using them in ways that are ripe for technological surprise.

So we've got to do this. We've got to commit. We've got to go. And I've got to tell you, Secretary Carter is absolutely just focused on this. As he says, only in Washington, D.C., is 18 months considered a short period of time.

We have a lot time to work this. I want to thank everybody here. I want to thank Fred Ryan for inviting. I want to thank the Reagan Library. This is just an unbelievable forum

of bipartisan, in fact, non-partisan forum, maybe sometimes a little partisan, but --
(Laughter) -- but it is conversations like this, of working together, that will allow the United States to achieve an offset against our potential adversaries and make sure we never go to war.